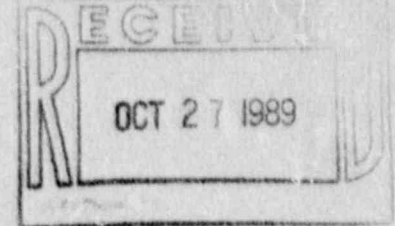


Medical Center

1601 Perdido Street
New Orleans LA 70146



**Veterans
Administration**

OCT 17 1989

In Reply Refer To: 629/115

Ms. Linda Kasner
U. S. Nuclear Regulatory Commission
Region IV
Material Radiation Protection Section
Suite 1000
611 Ryan Plaza Drive
Arlington, TX 76011

THRU: Director, Nuclear Medicine Service (115)
c/o Ms. Helen Malaskiewicz
Program Analyst
Department of Veterans Affairs
810 Vermont, N. W.
Washington, D. C. 20420

Dear Ms. Kasner:

In reference to Docket Number 30-15040/89-01, License Number 17-01322-07, VA Medical Center, New Orleans, Louisiana, the enclosed is our verification of measures taken to correct deficiencies identified on inspection conducted May 11, 1989.

Please advise as to whether or not the corrective measures taken meet requirements for Xenon-133 studies to be resumed.

Sincerely,

JOHN D. CHURCH, JR.
Medical Center Director

JAMES W. FLETCHER, M.D.
Director, Nuclear Medicine Service (115)
Veterans Administration
Washington, DC 20420

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17-01322-07 FDC

IC-89-666

"America is #1—Thanks to our Veterans"

PROCEDURE FOR USE OF ^{133}Xe GAS
FOR
VENTILATION IMAGING

Quantities to be Used

Four Imaging Procedure Per Week

Average Activity Per Patient = 30 mCi

Possession Limit: As Needed

Use and Storage Areas

^{133}Xe will be received in the Nuclear Medicine Hot Laboratory.
Storage of ^{133}Xe will be in the shielded shipping container.

Procedures for Routine Use of ^{133}Xe

- 1 . Close door to Room 2E101.
- 2 . Verify exhaust system is on.
- 3 . Prepare ^{133}Xe dispensing/trapping system.
- 4 . Set camera and photographic controls, "peak in".
- 5 . Position patient.
- 6 . Place face mask on patient and hold firmly in place covering nose and mouth. A mouth piece may be used with a clamp on the patient's nose, if desirable.
- 7 . Attach ^{133}Xe dispensing collecting system.
- 8 . Instruct patient to take a deep breath. At the same time inject ^{133}Xe . Have patient hold his breath for 15 seconds and record image. This is the 15 second inspiration image.
- 9 . Instruct patient to exhale and stop breathing for 15 seconds. Record image. This is the 15 second expiration image.
- 10 . Instruct patient to breathe normally and obtain sixty second image. This is the sixty second equilibrium image.
- 11 . Change controls on system so the patient may inhale room air or air provided by the delivery system through the mask or mouth piece and exhale into the closed system.
- 12 . Record three (3) to six (6) second images until the bulk of ^{133}Xe has left the lungs. These are the sixty second washout images.

13. Close off Xenon Delivery System and remove mask from patient's face.
14. Dispose of Xenon gas trapping cartridges at 1 year intervals.

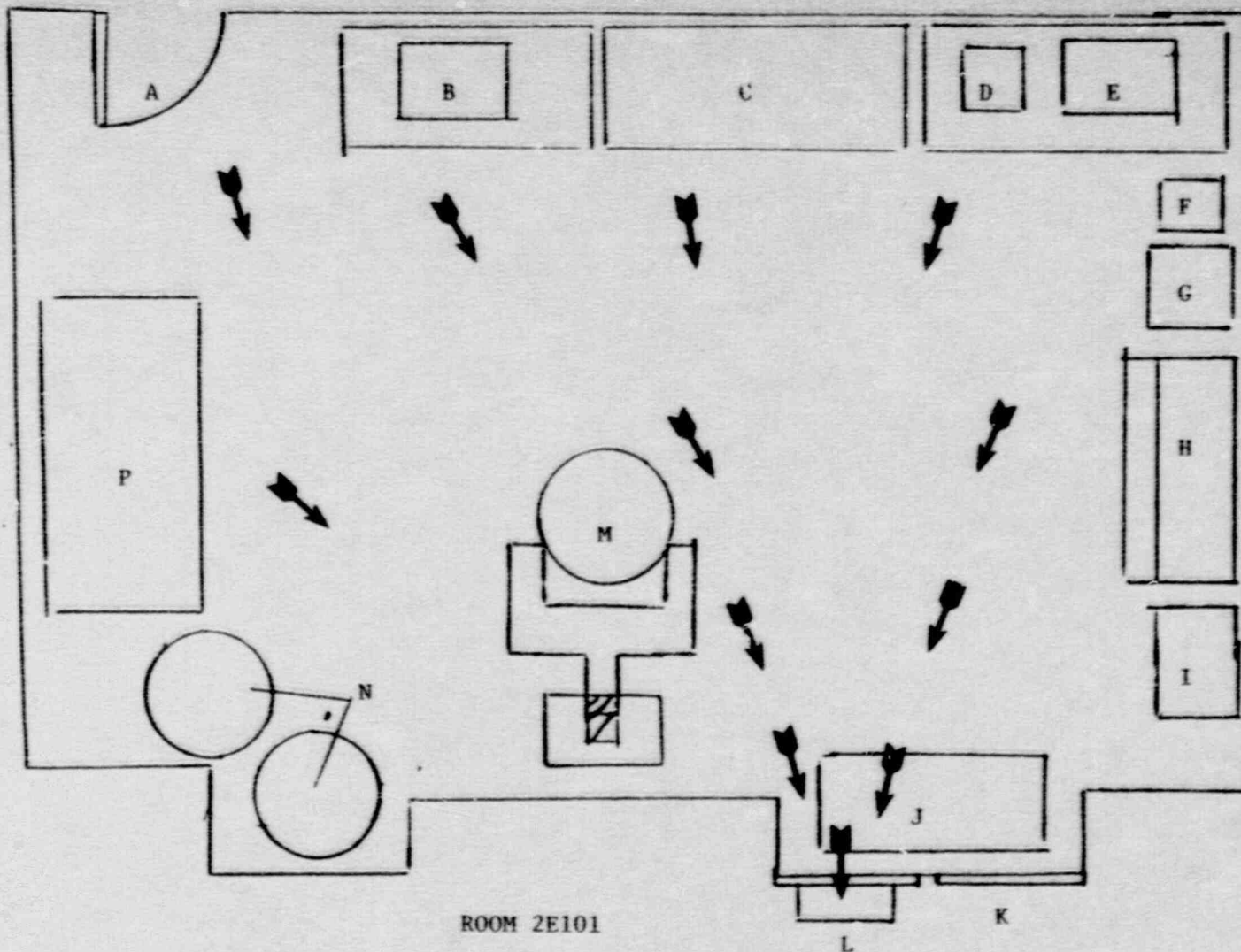
Emergency Procedures

In the event of accidental release of ^{133}Xe Gas

1. Turn Off HVAC supply and return air vents.
2. Maintain exhaust vent in the "or" position.
3. Evacuate the Nuclear Imaging Room 2E101.
4. Close and post the door of Room 2E101 with a "DO NOT ENTER", SEE RADIATION SAFETY OFFICER FOR RE-ENTRY, sign.
5. At one (1) hour, the Radiation Safety Officer will check with a GM Survey Meter for levels of ^{133}Xe at floor level.
6. If measured exposure rates are at background, room may be returned to normal use. If readings in excess of background are recorded, continue ventilation of the area and re-survey at 1 hour intervals.

Disposal of Saturated Cartridges

1. Trapping cartridges shall be replaced at one year intervals.
2. Date cartridges at installation.
3. Wearing disposable gloves, remove saturated cartridges.
4. Transfer cartridges to double plastic bag, seal tightly.
5. Store in appropriate shielding for 10 half lives (53.1 days) or until direct measurement with survey meter indicates "background" levels.
6. Dispose in normal trash.



- A. Doorway
- B. MDS Computer Terminal
- C. Table
- D. EPSON Video Monitor/Keyboard
- E. EPSON Printer
- F. RADX Ventilation Trap
- G. RADX Ventilation Unit
- P. Patient Stretcher

- H. SEARLE Camera Control Panel
- I. SEARLE Imager
- J. Table
- K. Window
- L. Window/Negative Pressure Exhaust Fan
- M. SEARLE Camera
- N. Collimators

PROCEDURE FOR USE OF REGIONAL CEREBRAL BLOOD FLOW (rCBF)
with NOVO CEREBROGRAPH 32C

Quantities to be Used

One Procedure Per Week

Average Activity Per Patient = 30 mCi

Possession Limit: As Needed

Use and Storage Areas

^{133}Xe will be received in the Nuclear Medicine Hot Laboratory.
Storage of ^{133}Xe will be in the shielded shipping container.

Procedures for Routine use of ^{133}Xe .

- 1 . Close door to Room 2E112.
- 2 . Verify exhaust system is on.
- 3 . Load ^{133}Xe dispensing/trapping system.
- 4 . Set computer for acquisition.
- 5 . Position patient.
- 6 . Place face mask on patient and secure firmly in place covering nose and mouth. A mouth piece may be used with a clamp on the patient's nose, if desirable.
- 7 . Attach ^{133}Xe dispensing collecting system to mask.
- 8 . Start to acquire = monitor the leak alarm, hold the mask tighter if necessary.
- 9 . When the printer begin to type, stop Xenon Delivery System and remove mask from patient's face.
10. Dispose of Xenon gas trapping cartridges at 1 year intervals.

Emergency Procedures

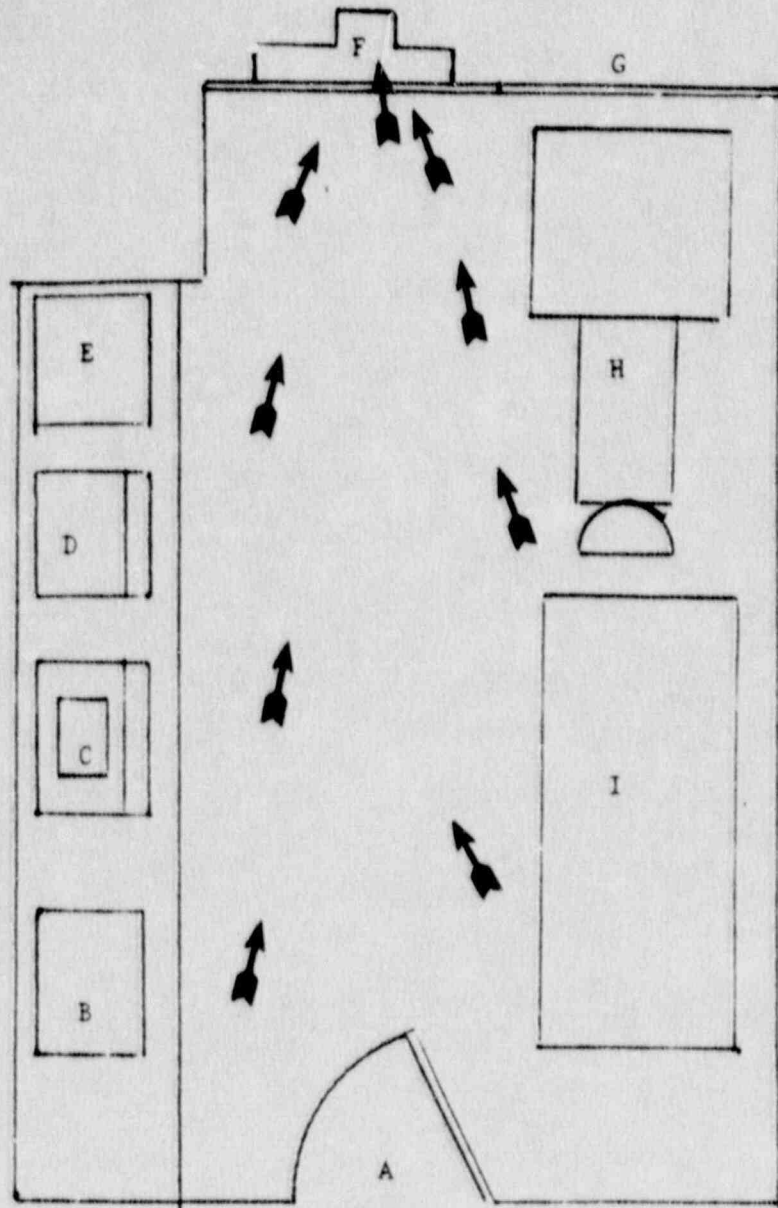
In the event of accidental release of ^{133}Xe Gas

1. Turn off HVAC supply and return air vents.
2. Maintain exhaust vent in the "on" position.
3. Evacuate the Nuclear Imaging Room 2E112.
4. Close and post the door of Room 2E112 with a "DO NOT ENTER", SEE RADIATION SAFETY OFFICER FOR RE-ENTRY, sign.
5. At one (1) hour, the Radiation Safety Officer will check with a GM survey meter for levels of ^{133}Xe at floor level

6. If measured exposure rates are at background, room may be returned to normal use. If reading in excess of background are recorded, continue ventilation of the area and re-survey at one (1) hour intervals.

Disposal of Saturated Cartridges

1. Trapping cartridges shall be replaced at one year intervals.
2. Date cartridges at installation.
3. Wearing disposable gloves, remove saturated cartridges.
4. Transfer cartridges to double plastic bag, seal tightly.
5. Store in appropriate shielding for 10 half lives (53.1 days) or until direct measurement with survey meter indicates "background" levels.
6. Dispose in normal trash.



ROOM 2E112
REGIONAL CEREBRAL BLOOD FLOW STATION

- | | |
|---------------------------------|--------------------------|
| A. Doorway | F. Window/Exhaust Fan |
| B. Sink | G. Window |
| C. Digital VT 125 Monitor | H. NOVO Cerebrograph 32C |
| D. Digital Decwriter IV Printer | I. Patient Stetcher |
| E. Digital 11 V03-L Computer | |

AIR CONCENTRATIONS OF XENON-133

ROOM 2E101:

Activity administered per patient = 30 mCi

Weekly workload = 4 patients/week

Maximum activity used/week:

$$A = 30 \text{ mCi/patient} (4 \text{ patients/week}) (10^3 \text{ uCi/mCi}) = 1.2 \times 10^5 \text{ uCi/week}$$

Loss rate, $F = 0.20$, assumed.

Air volume available/week, V :

$$V = A \times F / 1 \times 10^{-5} \text{ uCi/ml} = 1.2 \times 10^5 (0.20) / 1 \times 10^{-5} \text{ ml/week} = \\ 2.4 \times 10^9 \text{ ml/week}$$

Required ventilation rate =

$$2.4 \times 10^9 \text{ ml/week} / 40 \text{ hrs/week} \text{ divided by } 1.699 \times 10^6 \text{ ml/hr/ft.}^3 \text{ /min.} = \\ 35.3 \text{ ft.}^3 \text{/min.}$$

Required ventilation rate, Room 2E101 is 35.3 ft.³/min. with no recirculation of air

ROOM 2E112:

Activity administered per patient = 30 mCi

Weekly workload = 1 patient/week

Maximum activity used/week:

$$A = 30 \text{ mCi/patient} (1 \text{ patient/week}) (10^3 \text{ uCi/ml}) = 3 \times 10^4 \text{ uCi/week}$$

Loss rate, $F = 0.20$, assumed.

Air volume available/week, V :

$$V = A \times F / 1 \times 10^{-5} \text{ uCi/ml} = 3 \times 10^4 (0.20) / 1 \times 10^{-5} \text{ ml/week} = \\ 6 \times 10^8 \text{ ml/week}$$

Required ventilation rate =

$$6 \times 10^8 \text{ ml/week} / 40 \text{ hrs/week} \text{ divided by } 1.699 \times 10^6 \text{ ml/hr/ft.}^3 \text{ /min} = \\ 8.8 \text{ ft.}^3 \text{/min.}$$

Required ventilation rate, Room 2E112 is 8.8 ft.³/min. with no recirculation of air.

HUGUET SHEET METAL WORKS

HEATING AND AIR CONDITIONING

PHONE 888-3584

4449 W. METAIRIE AVENUE

METAIRIE, LA. 70001

October 10, 1989

V.A. Medical Center
1601 Perdido Street
New Orleans, La. 70146

I checked the Air Flow from power vents in windows
and Air Conditioning Ducts in ceiling-----

Room 2E 111

Exhaust Power Vent 655 CFM

Supply A/C grill 556 CFM

Ventilation rate for Room 2E 101 with no
recirculation of Air is 99 CFM

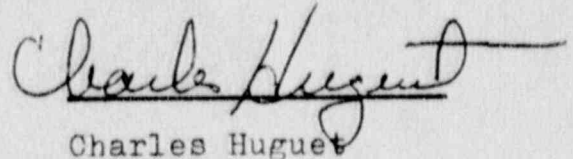
Room 2E 112

Exhaust Power Vent 261 CFM

Supply A/c grill 103 CFM

Ventilation rate for Room 2E 112 with no
recirculation of Air is 158 CFM

Each Room has a negative air pressure when
power vent is on -----


Charles Huguet